

3.13 PUBLIC SERVICES AND UTILITIES

This section discusses existing conditions, impacts, and mitigation measures for public services and utilities within the vicinity of the project site. The analysis in this section is primarily based on information provided by the Applicant in the ASC (BP 2002, Section 3.13 and Appendix L). Where additional sources of information were used to evaluate the potential impacts associated with the proposal, those sources have been cited.

3.13.1 Existing Conditions

Recreation

Recreational opportunities for both residents and tourists range from the national parks and forests found in the eastern two-thirds of Whatcom County, to the opportunities offered by Puget Sound in the west, to the urban attractions of the historic village of Fairhaven. Table 3.13-1 presents a listing of major public recreational areas in Whatcom County. With the exception of the smaller, specific-purpose areas such as the Hovender Homestead Park, most of the recreational areas listed in Table 3.13-1 offer multiple-use opportunities for sport, education, and accommodation.

Table 3.13-1: Major Public Recreational Areas

Recreational Area	Location	Approximate distance from project site	Facilities
Federal			
Mt. Baker-Snoqualmie National Forest	Whatcom and south, 1,709,700 acres	100 miles	Water sports, winter sports, Wild and Scenic River, Mt. Baker Wilderness Area, trails, 30 US Forest Service campgrounds
North Cascades National Park	Whatcom and south, 505,000 acres	100 miles	Water sports, winter sports, trails, rafting, camping, lodging
State			
Birch Bay State Park	Birch Bay, 194 acres	2 miles	Boat launch, picnic sites, fishing, swimming, water sports, Audubon Sanctuary, camping
Larrabee State Park	Bellingham, 2,683 acres	15 miles	Boat launch, picnic sites, fishing, swimming, water sports, camping
Lake Terrell Wildlife Area	Lake Terrell, 1,500 acres	2 miles	Hunting, fishing, hiking, boating, wildlife viewing, and birdwatching
Peace Arch	Blaine, 20 acres	8 miles	Picnic sites
County			
Hovender Homestead Park	Ferndale	4 miles	Historic Place, picnic sites, trails, fishing
Lighthouse Marine Park	Point Roberts, 22 acres	15 miles	Boat launch, picnic sites, camping
Samish Park	Bellingham, 39 acres,	15 miles	Boat rentals, picnic sites, swimming
Semiahmoo Park	Blaine, 300 acres of tideland	8 miles	Paths
Silver Lake Park	Sumas, 411 acres	20 miles	Boat launch, picnic sites, trails, horseback riding, camping, cabins

Table 3.13-1: Continued

Recreational Area	Location	Approximate distance from project site	Facilities
City of Bellingham			
Lake Padden Park	Bellingham, 900 acres	15 miles	Boat launch, picnic sites, fishing, swimming, trails, sports facilities
Whatcom Falls	Bellingham, 209 acres	15 miles	Picnic sites, fishing, trails, sports facilities
Sehome Arboretum	Bellingham, 175 acres	15 miles	Trails

Source: BP 2002, Section 3.13

The cogeneration facility would be built within Applicant-owned property, adjacent to the BP Cherry Point Refinery, in an area of Whatcom County zoned for heavy industry and populated with a number of other heavy industry facilities. There are no recreational facilities within this Heavy Impact Industrial zone of Whatcom County. The nearest public recreational facilities to the proposed cogeneration facility site are Birch Bay State Park, approximately 2 miles northwest of the project site, and the Lake Terrell Wildlife Area, approximately 2 miles southeast of the project site. Beachwood Resort, an 80-acre private membership recreational vehicle resort, is also approximately 2 miles northwest of the site.

Schools

Whatcom County has 34 elementary schools, 11 middle schools, 9 high schools, and 10 alternative education facilities. It has four colleges and universities: Bellingham Technical College, Whatcom Community College, Western Washington University, and the Northwest Indian College. Total enrollment in Whatcom County's public education system from elementary to high school is more than 23,000. The colleges have a total enrollment of more than 14,000 and the university has more than 12,000 students. In addition to schools in the public system, there are 21 private schools, 4 in Lynden and the remainder in Bellingham.

Table 3.13-2 provides capacity and enrollment information for Whatcom County public school districts. The proposed site for the cogeneration facility, refinery interface, and cogeneration facility/Bonneville transmission system is located within the Blaine School District. The existing Bonneville transmission corridor for Custer/Intalco Transmission Line No. 2 is located within the Ferndale School District.

As Table 3.13-2 indicates, the Blaine School District comprises three elementary schools, one middle school, and one high school, and is currently operating at 100% capacity. The Ferndale School District consists of seven elementary schools, two middle schools, and one high school, and is operating at approximately 84% capacity.

Table 3.13-2: Public Schools

School District	Level			Capacity	Students	% use
	Elementary	Middle	High			
Bellingham	13	4	3	12,550	9,986	79.6
Blaine	3	1	1	<2,043	2,043	100.0
Ferndale	7	2	1	5,860	4,941	84.3
Lynden	3	1	1	3,125	2,431	77.8
Nooksack Valley	2	1	1	--	--	--
Meridian	2	1	1	1,756	1,572	89.5
Mt. Baker	4	1	1	2,505	2,321	92.7
Total	34	11	9	27,839	23,294	83.7

Source: BP 2002, Section 3.13

Fire Response Services

Firefighting resources in Whatcom County are provided through 17 fire protection districts and 2 municipal city fire departments, with a total of 175 paid firefighters and 645 volunteer firefighters. The project site is within Whatcom County Fire District No. 7, which has jurisdictional responsibility for coverage of a 73-square-mile area of the county, from Bay Road south to Slater Road and from the Strait of Georgia east to Aldrich/Guide Meridian Road. The jurisdiction includes the City of Ferndale, all the major industrial complexes, and a population of approximately 17,500.

Fire District No. 7 consists of six fire stations. Two of these stations are near the project site at 4047 Brown Road (1.5 miles from the project site) and 5419 Grandview Road (2.5 miles from the project site). District 7 is a combination department consisting of 16 career and 70 volunteer firefighters. District 7 maintains and staffs seven engines, (three 1,750 gpm and four 500 gpm) out of the six stations, along with five licensed aid units, (three rescue and two transport-capable ambulances). District 7 is currently purchasing a 100-foot aerial ladder truck designed for refinery and power plant firefighting needs.

The Applicant has proposed that the existing onsite fire protection services of the BP Cherry Point Refinery would be expanded to provide fire protection services for the cogeneration facility. Fire protection services associated with the refinery typically include 100 fire responders on call during the week, at least 12 of whom are specifically assigned to locations around the refinery property. During the weekend, 20 fire responders are on call, at least 12 of whom are assigned to specific locations around the property. Given the specialized nature of refinery operations, refinery firefighting personnel are specifically trained to respond to these types of fires. Several of these firefighters are fire response instructors who routinely provide training courses at other industrial installations around the state and nation. In addition, all refinery employees are required to attend annual safety courses and pass written exams to educate them on required procedures, protocols, and emergency response expectations at the refinery. These efforts are focused on preventing fires and, in the event of a fire or other emergency, limiting their potential impact (BP 2002, Section 3.13).

Refinery equipment available for firefighting includes three pumper trucks (1,250 gpm, 1,500 gpm, and 2,000 gpm capacity); an extensive system for the supply of water for firefighting based on pipelines, pumps, and fire hydrants distributed around the site; a stock of 10,000 gallons of foam; a 6,000 gpm, trailer-mounted pump; and a Hazardous Materials Management truck.

Historically, the refinery has averaged one fire incident per year, and with one exception, these have been minor and immediately extinguished by refinery personnel. The infrequency of events suggests that there may be no discernible pattern in terms of seasonal or operational peaks.

Only one fire (in 1977) has occurred during the life of the BP Cherry Point Refinery that required outside assistance to control. That fire occurred on the Hydrocracking Unit when a fin fan tube developed a leak and high pressure oil and gas leaked from the tube and ignited. The fire was extinguished by the onsite Refinery Emergency Response team, and outside fire department equipment and personnel were used to help cool surrounding equipment and structures. Following the incident, a number of modifications were made to equipment and procedures to prevent a reoccurrence (Torpey, pers. comm., 2003).

Police and Security Services

The Whatcom County Sheriff's Office provides police services within unincorporated Whatcom County. In the event of a criminal incident at the refinery, the Whatcom County Sheriff's Office would normally be called to the site by the Applicant's security personnel. During the 30 years the refinery has been in operation, such an event has never occurred.

Whatcom County statistics for 2000 show a total of 256 incidents of violent crime, broken down as aggravated assaults (44), assaults (161), rapes (50), and homicides (1) (BP 2002, Section 3.13). This represents a decrease in violent crimes of approximately 9.5% over the previous year. As a ratio of incidents to population using the 2000 population figures, this represents 1 incident for every 650 people.

The Applicant has proposed that the existing onsite security services of the refinery would be expanded to provide security services for the cogeneration facility. The refinery maintains the services of a professional contract security force, which patrols the property 24 hours a day, 365 days a year. During the week, 12 security staff are onsite, while 8 security staff are present during the weekend. Volunteers are not used. Security staff are provided with training both general to security work, and specific to refinery operations at Cherry Point. They are trained, for example, in bomb threats, safety, emergency medical care, oil spill response, terrorist awareness, radio, locks and keys, threatening call diffusion, and pipeline inspection. In addition, they undergo monthly refresher sessions and weekly exams. Three four-wheel-drive vehicles are stationed onsite at all times so that security personnel are able to quickly reach all areas of the Applicant's property at Cherry Point.

Incidents at the site have been limited to the occasional theft of small equipment, on average about once a year. Security personnel also respond to incidents around the site perimeter of the refinery. There has never been a case of such an incident leading to personal injury or physical damage to refinery facilities or equipment.

Emergency Medical Services

The Applicant has proposed that the existing onsite emergency medical services of the BP Cherry Point Refinery would be expanded to provide emergency medical services for the cogeneration facility. The existing emergency medical services resources, including facilities, personnel, and training programs at the refinery, include the following (BP 2002, Section 3.13):

- A full-time certified Physician Assistant during the week, with more than 20 years of experience at the refinery;
- A full-time Nurse Practitioner (who is also a Registered Nurse) during the week, with more than five years experience at the refinery;
- Four Emergency Medical Technicians on call as the first to respond to medical emergencies after regular working hours and on weekends;
- Between 100 and 120 First Aid Providers available across the refinery to respond to needs, with at least 25 present per shift; and
- A rotational pool of three doctors, one of whom visits the refinery for one day each week.

Emergency medical facilities at the refinery include a staff clinic with two examining rooms, a major treatment room, and a supply room. The clinic has one ambulance and a helipad for airlifting patients to hospitals in either Bellingham or Seattle. The clinic has an emergency radio system directly connected to the Whatcom County Emergency Center as well as to St. Joseph Hospital in Bellingham, an approximately 20-minute drive from the refinery. The clinic is equipped with automated defibrillators (which can be operated by the emergency medical technicians) as well as a manual defibrillator (operated by medical professionals), and is fully supplied, including intravenous and airway supplies, cardiac medication, and a multi-trauma kit. Medical emergencies occur infrequently at the refinery, typically less than once per year, and most have been within the capability of the refinery's onsite resources to manage.

The only hospital in Whatcom County is St. Joseph Hospital, which is operated as a non-profit, voluntary, private institution, unsupported by tax revenue. The hospital charges for its services, but provides services regardless of ability to pay. The hospital has 253 beds and 24 newborn bassinets. It has 300 doctors, employs a total of 1,700 full and part-time employees, of whom 515 are nurses, and has an average of 250 volunteers. The hospital provides a full range of nursing services, as well as advanced cardiovascular, cancer, mental health, radiological, respiratory, rehabilitation, and surgery services.

The hospital is a Level II Certified Trauma Center. In Washington State, only Seattle has a higher Certified Level I Center that is open 24 hours a day, 365 days a year. St. Joseph Hospital is an integral part of the Whatcom County Emergency Medical Services network, connected by radio to the paramedics and emergency medical technicians from fire departments (which provide local ambulance service), and other organizations such as the refinery. The hospital operates with Airlift Northwest to bring assistance to scenes of emergencies throughout Whatcom County, Skagit County, Island County, and San Juan County.

The hospital currently has a \$70 million expansion program underway, which would add approximately 170,000 square feet of space for major services, inpatient beds, and parking. The expansion is part of a 20-year Master Facility Plan, developed with the City of Bellingham and the hospital board of community leaders. The primary drivers for expanding the hospital facilities include anticipated strong growth in the population of the area and an aging population. Funds have been raised from the hospital's cash reserves and from a private bond issue (BP 2002, Section 3.13)

Local medical facilities would also respond to the requirements of the anticipated weekly commuting and relocating workers and their families, who are estimated to be no more than 414 people at a maximum during the peak of construction. This represents a relatively low number of people coming into the area as a result of the cogeneration facility, relative to the local population of Whatcom County and of the Bellingham, Blaine, and Ferndale areas. There are also no reports of over-extended medical facilities locally.

Communications

Whatcom County is served by two daily newspapers, both published in Bellingham. These are the Bellingham Herald and the Northwest Citizen. Bellingham, Birch Bay, Blaine, Ferndale, and Lynden each have one or more smaller community newspapers, usually published weekly. The Business Pulse is a Whatcom County magazine.

Cable and satellite service companies, including AT&T, DIRECTV, and TCI Cablevision of Washington, provide the full range of television stations, as well as a local community access television station. Bellingham, Blaine, Ferndale, and Lynden all have broadcast radio stations. The telephone infrastructure is provided by Qwest, while AT&T and Sprint also offer the full range of long distance, internet access, and other telephone services.

Water Supply and Wastewater Discharge Infrastructure

Sections 3.3 and 3.4 characterize the existing surface water and groundwater regimes within the project site and surrounding area, and describe the stormwater management, water supply, and wastewater treatment processes to be implemented during construction and operation of the project.

Solid Waste

There are currently no operating landfills in Whatcom County. Three transfer stations operate at Birch Bay, Cedarville, and Point Roberts on sites leased out by the county. A fourth site located on private property in Lynden is also open to the public. Disposal of solid waste is carried out by private waste haulers through agreements with the county (Whatcom County 2003b). Currently, the Applicant retains the services of licensed waste haulers to collect and dispose of recyclable and non-recyclable wastes generated at the refinery to approved disposal facilities.

3.13.2 Impacts of the Proposed Action

Construction

Cogeneration Facility, Refinery Interface, and Other Project Components

Recreation

Impacts on recreational facilities as a result of construction activities for the cogeneration facility would primarily be related to potential increases in facility use associated with the project's construction workforce. Any increased use of recreational facilities would likely come from a non-local workforce. This would include both weekly commuters, who are less likely to access recreational facilities because they are not present in the area on weekends, and temporarily relocated workers and their families. Temporary relocations associated with project construction are estimated to not exceed 180 individuals at any one time (BP 2002, Appendix L). This relatively small number of construction workers and their families is not expected to impose unmanageable demands on existing recreation infrastructure in Whatcom County. See Section 3.12 for additional discussion of temporary worker relocations associated with construction of the project.

An additional potential impact on recreational facility users during construction would be the effects of construction traffic on access roads to recreational facilities near the cogeneration facility site – specifically Birch Bay State Park and the Lake Terrell Wildlife Area. Such effects, however, would be relatively short term, and would not be likely to significantly impact the public's ability to use these facilities.

Schools

With the exception of the Blaine School District, which only accepts students from within its own district, other schools in the Bellingham, Ferndale, and Birch Bay areas are not filled to capacity, and would have room for an incremental increase in the number of students from families who could move to the area during construction of the cogeneration facility. As described in Section 3.12, very few of the estimated 180 relocating construction workers are expected to bring their families, given that only 27 jobs would last longer than a 10-month period. Given that relatively few families with children would be expected to relocate to the area during project construction, construction of the project is not expected to significantly affect overall school enrollments for the area. Individual family decisions regarding where to reside would determine which schools students in those families would be eligible to attend. It is possible that families choosing to reside within the boundaries of the Blaine School District could add students to that district's enrollment, which is currently at capacity.

Fire Response Services

The probability of a significant fire or explosion at the cogeneration facility site or within the refinery during construction is considered low, and construction of the cogeneration facility is not expected to significantly impact the delivery of firefighting services (see Section 3.16, Health

and Safety, for a discussion of the potential for fire or explosion during construction of the cogeneration facility).

The Applicant is proposing that existing firefighting services and infrastructure currently in place to support the refinery would support fire preparedness and response needs for the cogeneration facility as well. Section 3.16 discusses proposed changes to the refinery's Fire Emergency Response Operations (FERO) plan and Emergency Preparedness Plan (EPP) to address the construction and operation of the cogeneration facility and refinery interface components.

Fire District 7 has Mutual Aid Agreements in place with all Whatcom County Fire Agencies to ensure full support in the event that onsite refinery and District 7 firefighting resources are insufficient to mitigate an emergency. The refinery's onsite resources, personnel, and equipment, with available support from Fire District 7, would be sufficient to respond to most emergencies. Additional resources or agencies are unlikely to be required, except in the event of a large-scale or long-term emergency.

In the unlikely event of an emergency beyond the capability of the refinery's resources, the Whatcom County emergency services would be called upon. Whatcom County's Division of Emergency Management is responsible for developing and maintaining community infrastructure for emergency/disaster mitigation, planning, response, and recovery. It is mandated to maintain a constant state of readiness to respond to events that might exceed the capability of any single jurisdiction or entity, and works closely with local industry (including the Applicant) to exercise that mandate. The division has an Emergency Operations Center that can be activated to gather and disseminate information, make strategic decisions, allocate resources, and coordinate responses to emergencies. This structure is in place, and is funded and staffed to the level required. Construction and operation of the cogeneration facility would not introduce new hazards that would require initiative on the part of the division to incorporate into its work.

Police and Security Services

Access to the project site would be controlled through gates from Grandview Road. During construction, additional security measures would be provided by installing and maintaining fencing around the perimeter of the cogeneration facility construction site and around the perimeter of Laydown Areas 1, 2, and 3, which are currently within existing fenced areas. Site access would be controlled for personnel and vehicles by a contracted security service.

The Applicant would provide for project site security by using contracted security staff. It is unlikely that the addition of approximately 180 relocated construction workers into the Whatcom County area during construction of the cogeneration facility would significantly increase the incidence of violent crimes. Consequently, it is not anticipated that local law enforcement agencies would need to increase their staff or resources as a result of project construction.

There is the remote possibility of an extreme security or emergency incident that would involve local police. Section 3.16 describes the response to such an incident. Should such an event occur, local police would be notified and would likely draw upon other state and federal security

agencies, such as the Division of Emergency Management resources, as described above for a fire emergency.

Emergency Medical Services

During construction of the cogeneration facility, there would be a large number of workers onsite relative to the permanent operational workforce for the project. The Applicant has managed its own emergency medical services at the refinery for the last 30 years, and proposes to provide its own onsite medical services for the cogeneration facility as well.

During construction of the cogeneration facility, the Applicant would implement a safety plan that would include mandatory health and safety orientation for all personnel onsite, periodic additional safety training for the duration of construction, safety audits, and monitoring of work processes by a safety engineer. Because the Applicant would manage its own emergency medical services for construction and operation of the cogeneration facility through existing refinery resources, there would be little or no demand for support from other community emergency medical services during construction.

Communications

Construction of the cogeneration facility would require the establishment of temporary communications. A project construction office with telephone, computer, and facsimile transmission systems would likely be established on the project site. Cell phones, pagers, and portable computers would also be used by some construction personnel. The demand for these communication systems and services associated with the construction of the cogeneration facility is not expected to significantly affect the quality or availability of communication services in the vicinity of the project site.

Public Water Supplies

During construction of the cogeneration facility, water would be supplied from the refinery or the Engineering Procurement and Construction (EPC) contractor to provide dust control. The water service would be contracted out to a local company or supplied by the EPC contractor.

Water for HRSG and export steam line steam-blow tests and hydrostatic tests would be required for commissioning of the power plant facilities, natural gas connections, and water supply/discharge connections. The volume of water needed for HRSG steam-blow testing would be about 15.5 million gallons. Export steam line steam-blow testing would require about 1.2 million gallons, and hydrostatic testing would likely not exceed 4.8 million gallons. Testing would take place near completion of construction over a period of two to three months. The water source would either be industrial water directly from the PUD, or recycled cooling water from Alcoa Intalco Works if it is in operation.

Wastewater

During construction of the cogeneration facility, the EPC contractor would be responsible for the removal and disposal of sanitary wastes associated with the construction workforce. As for other services, sanitary waste removal would be provided by a commercial service provider.

Water used for hydrostatic testing and other startup needs would be discharged to the refinery wastewater treatment system. Should there be contamination of stormwater within the secondary containment berms, that stormwater would also be directed to the refinery wastewater treatment facility. This additional volume is not expected to cause any overload to the existing system. According to the Applicant, water volumes used for hydrostatic testing are not dissimilar from those used for various refinery functions and are not expected to exceed the capacity of the refinery's wastewater treatment system.

Stormwater

During construction of the cogeneration facility, BMPs for sediment and erosion control would be implemented and maintained. These would include the construction of diversion ditches to prevent runoff from entering the site and temporary swales to filter and divert stormwater to the treatment and detention system. After the settling of eroded materials in the detention basins, the water would be discharged to wetlands north of Grandview Road.

The proposed stormwater collection and treatment system would allow infiltration to occur and proper detention of stormwater to minimize peak discharge flows. The final discharge would be to wetlands for enhancement, where the water would be able to infiltrate and recharge the shallow groundwater-bearing zone. Stormwater collection, treatment, and discharge would be within the same hydrologic basin where the stormwater originates, primarily the Terrell Creek watershed. Therefore, no significant changes to the quantity of water would result to the Terrell Creek drainage basin during construction of the cogeneration facility. Additional information about stormwater control during construction may be found in Section 3.4.2.

Solid Waste

Table 3.13-3 summarizes anticipated categories and volumes of wastes to be generated during construction of the cogeneration facility and systems and components that would interface with the refinery.

During construction of the project, the EPC contractor would be required to segregate and dispose of wastes in accordance with applicable federal and state laws, and with local county regulations. This is normally undertaken through contracted local solid waste disposal haulers who are licensed to transport and dispose of construction waste materials in accordance with the Whatcom County comprehensive plan for solid waste. Non-hazardous wastes would be transported to state-permitted solid waste transfer stations, and/or to permitted landfills within Washington and/or Oregon. Hazardous waste disposal facilities are available locally at the Bellingham Disposal of Toxics Facility, although it reportedly has limited capacity. Depending upon the actual types and quantities of hazardous wastes to be generated during construction of

the cogeneration facility, the EPC contractor would be responsible for identifying alternative licensed hazardous waste disposal facilities.

Table 3.13-3: Summary of Anticipated Construction Waste Streams

Waste Stream	Waste Stream Classification	Estimated Amount	Estimated Frequency of Generation	No. Trucks and Frequency	Quantity Shipped
Scrap wood, steel, glass, plastic, paper calcium silicate insulation, mineral wool insulation	Non-hazardous solids	50 cubic yards	Weekly	1 per week	50 cubic yards
Empty hazardous material containers	Hazardous solids	1.5 cubic yard	Weekly	1 per week	1.5 cubic yard
Used and waste lube oil during CT and ST lube oil flushes	Hazardous or non-hazardous liquids	55 gallon drums	200 drums over life of construction	1 per 60 days	22 55-gallon drums
Oil rags, oil absorbent generated during normal construction activities, excluding lube oil flushes	Hazardous liquids	55 gallons	Monthly	1 per month	55 gallons
Solvents, used construction equipment lube oils, paint, adhesives	Hazardous liquids	200 gallons	Monthly	1 per month	200 gallons
Spent lead acid batteries	Hazardous solids	3 batteries	Yearly	1 per year	3 batteries
Spent alkaline batteries	Hazardous solids	80 batteries	Monthly	1 per month	80 batteries
ST and pre-boiler piping cleaning water, chelant	Hazardous or non-hazardous liquids	400,000 gallons	Once before initial startup	34	400,000 gallons
Waste oil from oily waste holding tank	Hazardous or non-hazardous liquids	25 gallons	Monthly	1 per month	25 gallons
Sanitary waste from potable chemical toilets and construction office holding tanks	Non-hazardous liquids	1,500 gallons	Daily	3 per week	1,500 gallons
Stormwater from construction area	Non-hazardous liquids	950,000 gallons	For a once in two years, 24-hour storm event	NA	NA
Fluorescent, mercury vapor lamps	Hazardous solids	40	Yearly	1 per year	40
Hydrotest water	Non-hazardous liquids	4.8 million gallons	Once before initial startup	Discharged to refinery water treatment system	4.8 million gallons

Source: BP 2002

Transmission System and Custer/Intalco Transmission Line No. 2

Fire Response Services

The risk of fire during construction of the transmission lines is considered low. The greatest risk may occur if construction activities occur during periods of moderate to high wildfire conditions.

Police and Security Services

Law enforcement concerns during construction of the transmission lines would be limited primarily to theft of construction equipment and materials, and vandalism. Given the relatively short duration of the proposed transmission line work, the potential for additional demands on law enforcement personnel is expected to be minimal.

Emergency Medical Services

During transmission line construction, the local demand for emergency medical services could increase due to construction accidents that could occur at or near the transmission line corridors. Construction workers would be exposed to hazards typical of major construction projects. If an accident were to occur, local emergency response units would be required to provide initial treatment and transportation to a local medical treatment facility, followed by the need for medical services at the receiving facility.

Communications

Transmission line construction would not adversely affect communications service providers. Existing communications systems, including telephone and wireless communications, would have the capacity to accommodate peak construction demands.

Public Water Supplies

Transmission line construction would not depend upon existing water supply systems to meet project water needs. There would be no significant impacts on water supply during project construction.

Solid Waste

The Applicant has not established solid waste management procedures. Solid waste from construction of the proposed transmission line would likely be managed through a service contract with a local waste management firm.

Existing transmission tower structures that would be removed under Option 2 would be removed from their foundations by crane or helicopter, and disassembled either onsite or at a nearby laydown area. The old wire, steel lattice towers, and other structures could be salvaged or made available for reuse, as appropriate. Other transmission line materials (such as hardware, cross arms, and insulators) would be removed from the ROW and properly disposed of.

Operation

Cogeneration Facility, Refinery Interface, and Other Project Components

Recreation

Potential impacts on recreational facilities associated with project operation are primarily related to potential increases in facility use associated with the project's work force, noise, and air emissions. None of these are expected to be significant.

The operational workforce of the cogeneration facility would not exceed 30 full-time individuals, no more than half of whom are expected to actually relocate, representing additional population to the area. The estimated total increase in population of less than 30 people associated with operation of the cogeneration facility would have an insignificant effect on recreational use within Whatcom and Skagit counties.

Potential increases in noise levels during routine operation of the cogeneration facility are unlikely to be detected at the nearest recreational facility (Birch Bay State Park). Noise analyses conducted for the project projected that sound from the proposed project would increase noise levels at the park entrance by only 1 dBA. Because a 1 dBA increase is barely perceptible by most people in a laboratory setting, people at the park entrance are not expected to perceive any difference in noise levels. Park users are expected to be even less likely to perceive any difference in sound levels because they would be inside the park, farther from the project site. See Section 3.9 for additional discussion of operational noise levels for the project.

Air quality analyses conducted for the project indicate that emissions from the cogeneration facility are not expected to result in any significant impacts on air quality or to visibility in the area. Therefore, operation of the cogeneration facility is not expected to impact recreational opportunities in Whatcom County. Section 3.2 provides additional discussion of air emissions from the project and associated air quality and visibility impacts.

Schools

Operation of the cogeneration facility is projected to create 30 new jobs. Even if a maximum of 15 families relocated from outside of the area and they all had school-age children, the addition of their children to the local school population within Whatcom County would not significantly impact overall local school enrollment levels. As with project construction, individual family decisions regarding where to reside would determine which schools students in those families would be eligible to attend. It is possible that families choosing to reside within the boundaries of the Blaine School District could add students to that district's enrollment, which is currently at capacity.

Fire Protection Services

During operation and maintenance of the cogeneration facility, mechanical failure, malfunctions in the electrical system, acts of terrorism, and human error are potential risks that could result in fire or explosion.

The Applicant is proposing that existing firefighting services and infrastructure currently in place to support the refinery would support fire preparedness and response needs for the cogeneration facility as well. The Applicant has proposed to modify the existing refinery FERO plan to provide detailed guidelines to facilitate effective response actions to emergencies at the cogeneration facility. In the event of fire or other emergency, the FERO plan would be activated. The plan provides detailed guidelines to assist responders and includes a command structure, duties and responsibilities, checklist for responders, equipment lists, instruction guides, and strategic actions for potential or critical incident scenarios that may occur in or around the facility. The FERO plan would be consistent with the Applicant's EPP, which provides preparedness and planning information for emergency conditions. Again, should this ever become necessary, the Applicant would coordinate efforts with local emergency agencies. All facility employees would receive regular training to ensure that effective and safe actions limit the potential occurrence of fire, and to increase the ability to respond effectively in the event of a fire (See Section 3.16, Health and Safety, for additional discussion of the FERO plan and EPP).

During operation of the cogeneration facility, existing staff and equipment at the refinery are considered sufficient to meet all but the most severe of potential fires. The fire protection system would consist of a site perimeter firewater loop with post indicating valves and hydrants, an automatic deluge system for transformers, a sprinkler system for steam turbine lube oil equipment and bearings, and detection and alarm equipment. A carbon dioxide system, provided by the CGT supplier, would protect this equipment. Buildings would have fire protection, including a pre-action system for the Administration Building and Auxiliary Substation Building, and dry stand pipe and Class III hose stations for all other buildings. Portable fire extinguishers of appropriate sizes and types would be located throughout the facility.

One trained employee would be assigned specifically to coordinate fire response actions at the cogeneration facility. Only in the event of an extraordinary incident would assistance be needed from outside of the Applicant's onsite fire response resources and infrastructure. The Applicant would maintain regular communication with the local sheriff, firefighting, and emergency response services in Whatcom County; Whatcom County's Emergency Planning Commission, and the Washington State Department of Ecology. By maintaining full disclosure on capabilities and resources to respond to fires with these other agencies, and by remaining current on legislated and regulatory requirements, the Applicant would ensure a state of readiness and preparedness to respond to potential fires.

The Applicant and refinery's onsite resources, personnel, and equipment, with available support from Fire District 7, would be sufficient to respond to most emergencies. Additional resources or agencies are unlikely to be required except in the event of a large-scale or long-term emergency. Similar to the discussion under project construction, in the event of an emergency beyond the

capability of the Applicant and refinery's own resources, the Whatcom County emergency services would be called upon.

Police and Security Services

The Applicant is proposing that existing security services and infrastructure currently in place to support the refinery would support the security needs for the cogeneration facility as well.

Project operation is not expected to have a significant effect on long-term demands for police and security services. Operation of the cogeneration facility is projected to create approximately 30 positions, which would have a minimal effect on traffic safety in the project vicinity. Cogeneration facility security measures would be incorporated into the project's facility and operation plans. Consequently, there would be no need for additional staff and equipment resources to maintain local law enforcement service levels.

Emergency Medical Services

The Applicant is proposing that existing emergency medical services and infrastructure currently in place to support the BP Cherry Point Refinery would support the cogeneration facility as well. The operational workforce for the cogeneration facility is well within the handling capacity of the existing facilities within the refinery. In addition, all employees of the cogeneration facility would receive training in first aid and cardiopulmonary resuscitation (CPR). Onsite treatment would be provided where the medical requirement is either first aid treatment only and/or patient stabilization until professional medical attention is obtained.

Given the extent and sophistication of the refinery's onsite medical resources, routine support from offsite community medical facilities during construction and operation of the cogeneration facility would most likely not be required. Medical emergencies, which historically have occurred infrequently at the refinery, could require medical assistance from the nearby St. Joseph Hospital in Bellingham. Whatcom County recently reported a population-to-physician ratio of approximately 555/1, which would not be significantly affected by the addition of approximately 30 permanent employees, or the potential addition of up to 15 relocating employees (and their family members), to the local population associated with operation of the cogeneration facility.

In the event of an extreme emergency that might necessitate involving local police, fire, or medical services, these services would be involved as part the coordination with the Division of Emergency Management resources, as previously described.

Communications

Operation of the cogeneration facility would require the use of communication systems and services, which would be most heavily concentrated at the facility's administration building. This demand for communications services would not likely be significant, and services would be provided by a local communications company.

Public Water Supplies

Industrial Water Supply. Fresh water is currently supplied to the refinery by Whatcom County PUD via an existing 24-inch pipeline, which enters the refinery at the southeast corner of the property. Fresh water or recycled industrial water from the Alcoa Intalco Works would be conveyed to the cogeneration facility through a new 16-inch underground pipe to be constructed within the refinery.

No new water rights or changes to existing water rights would be required for operation of the cogeneration facility. Letters of intent have been entered into by the Applicant, Whatcom County PUD, and Alcoa Intalco Works to allow the cogeneration facility to purchase industrial water that is currently allocated to the aluminum smelter. Under this scenario, Alcoa Intalco Works, when operational, would be able to provide approximately 2,770 gpm, and the excess not used by the cogeneration facility could be used by the refinery, resulting in a net reduction of water withdrawal from the Nooksack River. If Alcoa Intalco Works is not in operation, the approximately 2,244-2,316 gpm of process water required by the cogeneration facility would be supplied directly by the PUD. In either case, there would be no net increase in water withdrawal from the Nooksack River. The refinery's water use would also be reduced by about 20 gpm as a result of steam provided by the cogeneration facility. See Section 3.3 for additional discussion of project water supply/water rights issues.

Potable Water Supply. Birch Bay Water and Sewer District currently purchases water from the City of Blaine. The Birch Bay Water and Sewer District provides potable water to the refinery via an existing 6-inch potable water pipeline that enters the refinery in the vicinity of the contractor's gate from a utility right-of-way along Grandview Road. Potable water to the cogeneration facility would be provided by a new potable water pipe routed between the refinery and cogeneration facility.

During operation, the cogeneration facility is expected to require only 1 to 5 gpm on the average of potable water. This nominal amount would not impact available supplies or resources of potable water under current certified rights. See Section 3.3 for additional discussion of project water supply/water rights issues.

Wastewater

The cogeneration facility would generate wastewater from the cooling tower, the water treatment facility, blowdown from the heat recovery steam generators, collection of drainage from equipment and other sources, occasional turbine blade washing, and sanitary waste. Sections 3.3 and 3.4 provide detailed discussion of the expected flows and quality of various wastewaters.

During operation of the cogeneration facility, spent boiler feedwater, blowdown water, and drainage water from various sources would enter the refinery's existing refinery wastewater treatment system, which currently discharges treated wastewater under the terms and conditions of an NPDES Permit, to the Strait of Georgia through Outfall 1 at a depth of approximately 60 feet beneath the refinery's dock. The predicted flow and chemical composition of wastewaters from the cogeneration facility are provided in Sections 3.3 and 3.4.

After treatment in the refinery wastewater treatment system, wastewater from the cogeneration facility would be discharged along with the refinery wastewater to the Strait of Georgia. The cogeneration facility would add approximately 190 gpm on average, assuming 15 cycles of concentration in the cooling tower of non-recyclable process wastewater, to the refinery discharge. EFSEC has developed draft State Waste Discharge Permit conditions for operation of the cogeneration facility. These conditions include discharge limitations, monitoring requirements, reporting and record keeping requirements, an operation and maintenance plan for water quality treatment facilities, development of SPCC and hazardous waste management plans, and a SWPP plan.

Sanitary wastes would be discharged to the Birch Bay Water and Sewer District's treatment system in accordance with the terms and conditions of an Agreement between the refinery and the Birch Bay Water and Sewer District. The District has confirmed that it has the capacity to accommodate the incremental combined sewage loading from the refinery and the proposed cogeneration facility. The estimated volume of sanitary waste discharge from the cogeneration facility, which, when operational, would employ up to 30 people, would be between 1 and 5 gpm.

There would be no incremental cost to the District for connection or provision of sanitary waste services for the cogeneration facility. Under the terms of the negotiated agreement between the Applicant and the District, the Applicant would pay for all costs associated with the connection to the system, would hand over ownership of equipment outside the facility fence line to the District, and would pay connection and monthly service fees for the service. Potential impacts on public wastewater treatment infrastructure associated with operation of the cogeneration facility are considered negligible.

Sanitary waste discharges during operation of the cogeneration facility would account for a very small volume of discharge to the District's sanitary treatment system. Further, the capital costs associated with connection to the District's sanitary sewer treatment system would be funded by the Applicant and would not impose financial constraints or demands on public utilities.

Stormwater

During operation of the cogeneration facility, stormwater from site runoff would be managed through an onsite oil/water separation system and a wetpond for additional treatment and detention. Stormwater that could have come into contact with oils, greases, or other contaminants would be routed through the refinery's wastewater treatment system. EFSEC has developed draft State Waste Discharge Permit conditions for operation of the cogeneration facility. These conditions include discharge limitations, monitoring requirements, reporting and record keeping requirements, and an operation and maintenance plan for water quality treatment facilities.

The Applicant would implement and maintain BMPs to minimize potential impacts of the cogeneration facility on both the volume and quality of stormwater. A SWPP plan for operational procedures, in conjunction with the SPCC plan, would provide structural, operational, and erosion/spill control BMPs for all stormwater operational activities at the plant site. Because potentially contaminated stormwater associated with operation of the cogeneration

facility would be processed through the refinery's existing wastewater treatment system, the project would not impose demands on the public wastewater treatment system. Therefore, potential impacts on community stormwater infrastructure systems associated with the project would not occur.

Solid Waste

Table 3.13-4 summarizes anticipated categories and volumes of wastes to be generated during operation of the cogeneration facility.

The Applicant has not yet developed solid waste handling procedures for the cogeneration facility. It is anticipated that during operation of the cogeneration facility, the Applicant would implement similar protocols and procedures for the handling, segregation, and disposal of waste streams and recyclables as currently managed at the refinery. Typically, the refinery retains the services of licensed waste haulers to collect and dispose of recyclable and non-recyclable wastes at approved disposal facilities.

Table 3.13-4: Summary of Anticipated Operation Waste Streams

Waste Stream	Waste Stream Classification	Estimated Amount	Disposition
Boiler feedwater demineralizer regeneration waste, boiler blowdown, treated wash down, and oily drains	Non-hazardous liquids	50 gpm	Discharged to refinery for treatment per State Waste Discharge Permit
Spent SCR catalyst (heavy metals)	Hazardous solids	Approximately 4,800 cubic feet (once every 3 - 5 years)	Recycle
Spent oxidation catalyst (noble metals, heavy metals)	Hazardous /non-hazardous solids	Approximately 990 cubic feet (once every 3 - 5 years)	Recycle/reclaim
CTG used air filters	Non-hazardous	Approximately 1,500 filters (once every 3 years)	Landfill disposal
CGT off-line wash water	Non-hazardous liquid depending on soap type	< 4,000 gallons/month	Refinery water treatment system
Scrap wood, steel, glass, plastic, paper	Non-hazardous solids	3 cubic yards/week	Landfill disposal or recycle/reuse
Used oil filters, grease, oil rags, oil absorbent	Hazardous solids	1 cubic yard/month	Hazardous waste disposal facility
Spent batteries	Hazardous solids	100 batteries/year	Recycle
Empty hazardous material containers	Hazardous solids	<1 cubic yard/week	Hazardous waste disposal facility
Solvents, paint, adhesives	Hazardous solids	<55 gallons/month	Hazardous waste disposal facility
Used lube oils and hydraulic fluids	Hazardous liquid	25,000 gallons (once every 10 years)	Recycle
Oil-water separator oil	Hazardous liquid	20 gallons/month	Recycle

Source: BP 2002

Public Utilities

The cogeneration facility would generate electricity over and above the immediate requirements of the refinery. The excess power would be transmitted through Bonneville's Custer/Alcoa Intalco Works transmission line to the Northwest grid. A contingency analysis performed by Bonneville determined that upon the loss of one of the 230 kV transmission lines from the Custer substation, the existing 230 kV transmission lines could exceed thermal operating limits established by Bonneville under certain conditions.

Two Bonneville transmission system modification options have been identified to address this potential condition. Under Option 1, a RAS would be installed. A RAS would include installation of additional electrical equipment within the Custer and Alcoa Intalco Works substations, and would provide for an automatic reduction in load at the Alcoa facility in the event of a potential overtemperature condition on the Bonneville transmission lines. This option would not require any changes to the 230 kV lines or towers themselves, but would require the agreement of the Applicant and Alcoa Intalco Works.

Under Option 2, a second transmission line inside the existing westernmost 230 kV line corridor leading from the cogeneration interconnection point to the Custer substation would be installed to increase the transmission capacity along this segment. The existing transmission towers in this approximately 5-mile-long segment would not be strong enough to carry a second line, so the existing towers would be replaced with new towers. Under this option, a RAS would not be required.

Of the two options, the Applicant prefers Option 1 because the implementation requirements of Option 1 would be less than those for Option 2 and the installation of new high voltage transmission lines and associated tower replacement would not be required.

Fiscal Impacts

The refinery's existing security, emergency medical, and fire response infrastructure would be capable of supporting the needs of these services during construction and operation of the cogeneration facility. It is anticipated that only in an extreme emergency, would local community fire, police, medical services, and other government resources be called upon to help respond to an event at the facility. During operation of the cogeneration facility, the number of individuals with their families that would move permanently into the area represents an insignificant percentage of both the existing local population and the forecasted population growth. Therefore, during routine construction and operation phases of the project, there would be no significant staffing or other financial demands placed on external or community resources for fire prevention and response, security and policing, and medical services.

Whatcom County operates on a revenue base that has seen its revenues grow from about \$92 million in 1997 to \$113 million in 2003. Expenditures have grown more quickly from \$84 million in 1997 to \$121 million in 2003 (Whatcom County 2003c). Whatcom County's 2003 budget forecasts a deficit in excess of \$8.5 million. The largest portion of revenue comes from

property, sales, excise, and timber harvest taxes, which based on 2003 projections, are expected to generate 43% of total revenue, equal to approximately \$49 million. The other major revenue categories are intergovernmental transfers at 18%, and charges for goods and services at 16%.

The cogeneration facility would generate additional revenue to Whatcom County through sales taxes on project-related local expenditures, property taxes, and sales taxes attributable to indirect economic impact. These revenues are estimated at \$10 million over the two-year construction period, and another \$4.6 million annually during operation of the cogeneration facility (see Section 3.12). These estimates are conservative; they do not account for fiscal benefits resulting from indirect or induced employment, or the redistribution of increased tax revenue within Whatcom County that would accrue to Washington State as a result of the cogeneration facility.

Relative to the present revenue of Whatcom County, the additional contribution of revenue resulting from expenditure, taxes, and income resulting from construction and operation of the cogeneration facility would be significant.

Transmission Facility and Custer/Intalco Transmission Line No. 2

Communications

Radio Interference (RI). Radio reception in the AM broadcast band (535 to 1605 kilohertz [kHz]) is most often affected by corona-generated electromagnetic interference (EMI). FM radio reception is rarely affected. Generally, RI can affect only residences very near to transmission lines. Because the new 230 kV transmission facility would be located more than 0.5 mile from the nearest residence and a new transmission line in the Custer/Intalco transmission corridor (if Custer/Intalco Transmission Line Option 2 is selected) would be within the existing 125-foot utility right-of-way, disruptive RI effects on local residences are not expected.

Television Interference (TVI). Corona-caused TVI occurs during foul weather and is generally of concern for transmission lines with voltages of 345 kV or above, and only for conventional receivers within about 600 feet of a line. Gap sources on distribution and low-voltage transmission lines are the principal observed sources of TVI, and the use of modern hardware and construction practices for the proposed transmission facility would minimize such sources.

There is a potential for interference with television signals at locations very near the proposed line in fringe reception areas. However, several factors reduce the likelihood of occurrence. Corona-generated TVI occurs only in foul weather; consequently, signals would not be interfered with most of the time. Because television antennas are directional, the impact of TVI is related to the location and orientation of the antenna relative to the transmission line. If the antenna were pointed away from the line, then TVI from the line would affect reception much less than if the antenna were pointed toward the line. Since the level of TVI falls off with distance, the potential for interference becomes minimal at distances greater than several hundred feet from the centerline. Because the new 230 kV transmission facility would be more than 0.5 mile from the nearest residence and a new transmission line in the Custer/Intalco transmission corridor (if Custer/Intalco Transmission Line Option 2 is selected) would be within the existing 125-foot utility right-of-way, disruptive TVI effects on local residences are not expected.

Other forms of TVI from transmission lines are signal reflection (ghosting) and signal blocking caused by the relative locations of the transmission structure and the receiving antenna with respect to the incoming television signal. Television systems that operate at higher frequencies, such as satellite receivers, are not affected by corona-generated TVI, and cable television systems are similarly unaffected.

Interference with television reception can be corrected by any of several approaches: improving the receiving antenna system; installing a remote antenna; installing an antenna for TV stations less vulnerable to interference; connecting to an existing cable system; or installing a translator. Bonneville has an active program to identify, investigate, and mitigate legitimate RI and TVI complaints. It is anticipated that any instances of TVI caused by the proposed line could be effectively mitigated.

Interference with Other Devices. Corona-generated interference can conceivably cause disruption on other communications bands such as the citizens band (CB) and mobile bands. However, mobile-radio communications are not susceptible to transmission-line interference because they are generally frequency modulated (FM). Similarly, cellular telephones operate at a frequency of about 900 MHz, which is above the frequency where corona-generated interference is prevalent. In the unlikely event that interference occurs with these or other communications, mitigation can be achieved with the same techniques used for television and AM radio interference.

3.13.3 Impacts of No Action

Under the No Action Alternative, the cogeneration facility would not be constructed and the potential effects associated with the project would not occur. Tax revenue associated with construction and operation of the project would not be realized by the State of Washington and Whatcom County.

3.13.4 Secondary and Cumulative Impacts

The project would not contribute to any significant cumulative adverse impacts on public services or utilities. Construction and operation of the cogeneration facility would bring a net fiscal benefit to Whatcom County and to the State of Washington in the form of additional tax revenues. There would be tax payments over the life cycle of the project, as well as from other government revenue deriving from local employment and contracting of local services. At the same time, the project would not impose incremental demands on local government spending, public services and utilities, or other community resources.

3.13.5 Mitigation Measures

No mitigation measures would be necessary because there are no significant adverse impacts on public services and utilities expected from the project. The Applicant would extend the fire, security, and emergency medical resources of the refinery to cover all but the most extreme emergencies. The project would develop response protocols with the Jurisdiction Having

Authority, Fire District No. 7, to ensure that additional support and resources are available from the district and other fire jurisdictions through the District Mutual Aid Agreements. The Applicant would provide for treatment of industrial wastewater and stormwater using onsite and refinery treatment systems.

3.13.6 Significant Unavoidable Adverse Impacts

No significant unavoidable adverse impacts on public services or utilities have been identified. The Applicant would extend the fire, security, and emergency medical resources of the refinery to cover all but the most extreme emergencies.